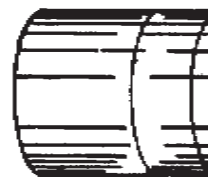


# *The* Connection



A Well Drilling Industry Newsletter



MISSOURI DEPARTMENT OF  
NATURAL RESOURCES

VOLUME 16 NUMBER 4

FALL 2009

## WELL INSTALLATION BOARD NEWS

The Missouri Well Installation Board held its quarterly meeting Aug. 7 at the Washington Public Library. At the meeting, the board heard from staff on several topics, including the abandonment fee and current rulemakings. The board voted to exempt all domestic and multi-family wells, irrigation wells and historic mineral exploratory test-hole abandonments from registration fees.

The next meeting of the Well Installation Board will be held at 10 a.m., Friday, Nov. 7 in the annex conference room at the Department of Natural Resources' Division of Geology and Land Survey, 111 Fairgrounds Rd., in Rolla.

## TOWN OFFERS BOUNTY ON ABANDONED WELLS.

A Missouri town recently offered a finders fee to locate abandoned wells within the community. Ava, the county seat of Douglas County in southern Missouri, took advantage of this innovative method using grant funds from the Missouri Department of Natural Resources.

In order to safely plug abandoned wells within the city limits, the city has offered \$50 per well, in the form of a credit to the property owner's utility bill, for notifying the city of abandoned wells on their property. The finder's fee was an option provided by the Department as a means for community water systems to locate abandoned wells. The number of abandoned wells within the city is estimated to exceed 100, and could be as high as 200. City officials have been pleased with the initial response

to the program. According to Janice Lorrain, Ava's Director of Development and Risk Management, the city received many responses within the first few days of the article being published. She added that interest in the finder's fee program has continued to increase as more citizens become aware of its existence.

The article from the *Douglas County Herald* is reproduced below in its entirety. The current grant program is no longer taking new applications. However, it is possible the grant program will be offered again in the near future. For more information, contact the department's Public Drinking Water Branch at 573-751-5331.

## City Offers Finder's Fee for Abandoned Well Information

*Reprinted with permission from the Douglas County Herald*

The City of Ava has been awarded a grant from the Missouri Department of Natural Resources to safely plug abandoned wells within the city limits. In order to identify these wells, the city is offering a finder's fee of \$50 per well to property owners who can locate an abandoned well on their property. The property owner must also agree to participate in the program and have the well properly plugged. Grant funds will pay for the work at no cost to the property owner. The finder's fee will be issued as a credit on the property owner's city utility bill.

An abandoned well is a direct conduit from the surface to the aquifer below. Abandoned wells that have not been properly plugged provide a direct channel for contaminants stored or spilled

above ground to move into aquifers being used for the drinking water supply. Soils can break down some potential groundwater contaminants and layers of clay serve as natural barriers to aid in protection of deeper aquifers.

However, when contaminants enter an open well they circumvent the normal groundwater. This puts other wells in the aquifer at risk, particularly those that are close to the abandoned well. The proper plugging of abandoned wells is a primary factor in the protection of the groundwater supply.

For more information on this program call Ava City Hall at 417-683-5516 and speak with Janice Lorrain, extension 207, or Vicki Williams, extension 206.

## **PLUGGING PROCEDURES FOR PUBLIC WELLS**

Plugging methods vary for different types of wells. The requirements for plugging public wells are the most stringent of all types of wells, due to the fact that public wells tend to be larger and deeper than domestic wells. Most bedrock wells that serve cities, public water districts or subdivisions can be more than 1,000 feet total depth. Greater emphasis is placed on plugging public wells to protect the lower aquifers. Deep aquifers are an extremely important source of drinking water, and once they are polluted they are rendered unusable for decades or longer.

If you are contracted to plug a public well, you should contact the department's Wellhead Protection Section for plugging specifications. The section may have well logs, records and other information to aide in determining how the well should be plugged. The section has a computer program to calculate the amount of fill and grout needed to plug any size of well. As a general rule, public wells must have at least a 100-foot cement plug, which should extend from about 10 feet inside the bottom of the casing to 100 feet below. Cement grout must be emplaced by the use of a grout pump. If the well is deep or has several hundred feet

of casing, clean fill may be added above and below this plug to help off-set the cost and amount of cement used. A 50-foot cement plug must be used at the surface. Cement is not allowed to be poured through standing water or gravity fed from the surface. Bentonite grout is not allowed to be used when plugging public wells. If a situation arises where the casing depth or total depth of a well is unknown and the well has served a public facility, it must be plugged full length. In the event a domestic well has been used to serve a public facility it may be required to be plugged similar to a public well. Always contact the department's Wellhead Protection Section when in doubt of the type of well you plan to plug. If the well is an alluvial well, the screened portion of the well must be plugged with cement. Clean fill may be used above the cement plug to within 50 feet of the surface. A cement plug must extend from 50 feet to ground surface. The casing must be cut off three feet below grade as normally required for all wells. Variances may be obtained from the department if the casing can not be cut off for wells located inside structures or in areas where access is limited.

The Department of Natural Resources has grant money available periodically to help offset the cost to plug public wells. In some instances, private homeowners can apply for assistance to plug their domestic wells when they hook on to a public water system. For more information regarding the availability of grant money please contact the Water Protection Section at 573-751-1300. For assistance on plugging specifications, please contact the Wellhead Section at 573-368-2165.

## **APPRENTICE PROGRAM**

The department's new well drilling apprenticeship program took effect March 1, and changed the process of obtaining a non-restricted well drilling permit. The onset of the new program has resulted in some appeals to the Well Installation Board by drillers who believe they should not be required to serve an apprenticeship.



The board has been consistent in allowing those appellants with experience verified by the department's records, to get their permits without serving an apprenticeship. These are mostly people who were previously permitted and let their permits lapse. The board is requiring these people to provide proof of financial responsibility and report their work to the Department for two years to get permitted without undergoing an apprenticeship.

By the same token, the board has been consistent in denying requests from individuals who claim they obtained several years of experience prior to the promulgation of the apprenticeship rule, yet they were never permitted. The board has no way of verifying these claims of experience. The new apprentice program allows the department to verify an applicant has the experience necessary to perform the work while protecting groundwater.

The department intends to modify the apprentice rule to reflect the board's decisions. Since the rule process takes more than a year to complete, the department anticipates more appeals to the board. As of the end of July, the well drilling apprentice program has 25 active apprentices. For more information on becoming an apprentice, please call the department's Wellhead Protection Section at 573-368-2450.

## **WATER WELL AND HEAT PUMP CONSTRUCTION LIABILITY IN OIL PRODUCING AREAS**

In west-central Missouri, especially in Vernon County, there lie deposits of heavy, thick oil. The consistency of this oil is such that producing it by conventional methods is uneconomical. Therefore, operators employ methods to reduce the oil's viscosity, making it more producible.

One method involves injecting high pressured steam into the oil-bearing formation that typically lies 200-300 feet below the ground surface. The steam heats the oil within the

formation, making the oil more mobile, which drives it to production wells. The construction of the injection and production wells requires the use of cement grout installed using a pressure grouting method to reduce any adverse effect the steam process could have on well construction.

There are relatively few water wells in this region of the state, but heat pump wells are becoming more common. Water wells in the area penetrate the oil-bearing formation and produce water from a lower aquifer below that formation. Heat pump wells may or may not breach the oil formation, depending on the depth. Bentonite is the most commonly used material for grouting both water and heat pump wells. There is a concern from oil operators that a steam injection project could adversely affect water or heat pump wells sealed with bentonite grout.

The department's Division of Geology and Land Survey regulates oil wells and injection wells associated with oil production. As part of the injection well permitting process, contractors are required to review all wells within one half mile of the injection site to determine if there is a need for a corrective action plan to remediate these wells prior to injection. If there are existing wells, the oil operator is responsible for ensuring their injection activity does not lead to fluid migration, which could impact underground sources of drinking water. This may be accomplished by plugging, redrilling and grouting wells with pressured cement.

Although steam injection well owners must check for pre-existing wells, they cannot control water or heat pump wells that are installed after their steam injection wells are in place. If a steam injection project is in place and a landowner wishes to install a water or heat pump well, it is in the best interest of the drilling contractor and owner to contact the oil operator to discuss the new well construction and the possible effects the steam injection project could have on the new well. Wellhead Protection regulations 10 CSR 23-1.020



state these rules are in place for “the proper isolation of possible sources of contamination from existing wells to protect the quality of groundwater aquifers [used] for providing safe drinking water supplies.”

This issue was presented to both the Well Installation Board and the State Oil and Gas Council in meetings earlier this year. The board and council both concurred with staff that the liability for water and heat pump wells that are installed in an area where heat injection wells already exist fall on the contractors installing the new wells.

If a steam injection project is taking place in an area where you have been contracted to drill a water or heat pump well, it is recommended that increased construction standards are used to protect the well from any influence from the steam injection activities. Feel free to call our office to get advice on the best grouting methods or other construction methods.

## **REVISED PAGES OF THE MISSOURI WELL CONSTRUCTION RULES SENT TO CONTRACTORS**

In August, a revised Chapter 5 of the Missouri Well Construction Rules was sent to well installation contractors. Chapter 5 was revised in 2007; however discrepancies existed between the official rule on record with the Secretary of State office and the copy sent to contractors. The new version sent in August replaces the one from 2007. Please review the most significant change in the chapter located in 10 CSR23-5.050 (9) C, requiring thermal grout slurry to contain at least 7.5 percent by weight bentonite solids and no more than 65 percent by weight silica solids. If you did not receive the revised chapter in August please contact the Wellhead Protection Section at 573-368-2165 to request the revised information.

## **FEE STRUCTURE CHANGE**

The department's Wellhead Protection Section recently sent out a notice of a change to the fee structure, which was effective July 1. However, the Well Installation Board voted in August to revise the amount of registration fees required on some abandonment forms.

Abandonment registration forms submitted for the following categories will be exempt from the registration fee;

- Domestic wells.
- Multi-family wells.
- Hand dug wells.
- Irrigation wells.
- Historical testholes (mineral exploratory holes completed prior to March 1, 1994).

The \$50 registration fee must still be submitted for all other categories of abandonments.

This change to the fee structure became effective Aug. 7. If you need forms or have any questions, please contact this office at 573-368-2165. Forms may also be found on the department's Web site at [www.dnr.mo.gov/forms/index.html](http://www.dnr.mo.gov/forms/index.html).

## **WELCOME**

The following individuals are now part of the Department of Natural Resources' permitted contractor community:

- Bureau Veritos North America – Joseph Campbell
- Burns & McDonnell – Benjamin Clement, Christopher Hogle
- CH2M Hill – Anthony Swierczek
- Chapman Heating and Air – Philip Figueiredo
- Fisher Mechanical LLC – Christopher Fisher
- Galanti Electrical Services – John Galanti
- Gredell Engineering Resources – Travis Doll
- GreenCo Technologies – James Wright
- Heggemann Inc – Michael Jordan
- Latimer, Sommers and Associates – James Latimer



- Layne Christensen – Todd List
- Premier Environmental Services – Kent Davis
- Sanders Services – James Sanders
- Schroeder Heating & Cooling – Jeffrey Schroeder
- SS&B Heating & Cooling – Michael Jones
- Teel Mechanical Service – Darrell Garrett
- Triangle Environmental Science – John Cable
- Stutesman Heat and Air – Larry Stutesman
- URS – Aaron Hackman
- WSP Environment & Energy – Steven Dawson

## WELCOME

The following individuals are now part of the Department of Natural Resources' permitted apprentice contractor community:

- Action Drilling/Stutesman Heat and Air – Larry Stutesman
- Environmental Works – Gregory Elchmeyer, Phillip Brazile
- Hornbuckle Heating and Cooling – Zack Hornbuckle
- Limback Plumbing/C and J Plumbing – Larry Limback Jr
- Merrill Drilling – Mark Merrill
- Millers Plumbing/Custom Comfort Heating– Casey Buckles
- Palmerton & Parrish – Eric Porter, Matthew Robison

## FAREWELL

The people addressed below are no longer permitted to operate as contractors according to the Water Well Drillers Act and Well Construction Regulations:

- Advanced Environmental Concepts – Joseph Thomas II, Matthew Baraby
- Blazekovic, Carmelo
- Bob Maxwell Repair – Robert Maxwell
- Brotcke Well & Pump – John Layton
- CH2M Hill – Tiffany Chapman
- Dorn Pump Service – Matthew Lafferty

- Environmental Resources Mgmt – George Lynn
- Forrest Pump Service – Michael Wollersheim
- Guyan, David
- Harriss Drilling Services – Edward Harriss
- Kansas City Mechanical – Thomas Bauder
- Leggette Brashears & Graham – Brandon Gomer
- Macon Electric – Mark McEwen
- Meyers, Keith
- Michael, Cecil
- Norton Irrigation – David Norton
- Pense Bros Drilling – Jerome Helms
- Professional Service Industries – Katherine Williams
- Ross, Daniel
- SCI Engineering – Karl Ruhmann
- Shannon & Wilson – William Kremer
- Stacy, John
- Terracon – Frank Shell
- Thiele Geotech Inc – Joseph Carman
- United Science Industries – Jarrod Yearwood
- Wideman Well Drilling – Kenneth Emmendorfer

## WELLHEAD PROTECTION SECTION CONTACT INFORMATION

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Division of Environmental Quality  
Wellhead Protection Section  
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Rolla, MO 65402-0250  
573-368-2165





Editor's Note: The Connection is published quarterly by the Missouri Department of Natural Resources' Division of Environmental Quality. If you have any suggestions, ideas or comments concerning this newsletter, please let us know. Send comments to:  
Missouri Department of Natural Resources, Wellhead Protection Section, P.O. Box 250, Rolla, MO 65402-0250, by phone to 573-368-2165, or by fax to 573-368-2317.

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